DETAILED PROJECT REPORT

AFFORDABLE RESIDENTIAL PLOTTED COLONY
UNDER
'DEEN DAYAL JAN AWAS YOJNA – 2016'
BEING SET UP ON AN AREA AD-MEASURING
14.84375 ACRES (LICENSE NO. 70 OF 2018)
IN THE REVENUE ESTATE OF
VILLAGE RATTANGARH & JHAMBRA PATTI,
SECTOR – 5, TEHSIL SHAHABAD,
DISTRICT KURUKSHETRA, HARYANA

SAMSUNG OVERSEAS LTD.
1702, ARYA SAMAJ ROAD.
KAROL BAGH,
NEW DELHI – 110 005
WEBSITE: https//www.satiijasmartcolony.com

Company Profile

Samsung Overseas Pvt. Ltd. is a Company incorporated under the Companies Act, 1956 (No. 1 of 1956) as a Private Limited Company on 19th November 1996 by the Ministry of Company Affairs in the National Capital Territory of Delhi and Haryana. The Company's name was changed to **Samsung Overseas Ltd.** pursuant to its conversion into a Public Limited Company on 21st August 2006 and a fresh Certificate of Incorporation under Section 23 (1) of the Act was issued with a Corporate Identity Number (CIN)–U45100DL1996PLC083354. The copy of the Certificate of Incorporation issued is enclosed as **Annexure – A/1**.

The Company is a group company of '***Sun & Sand Group of Companies***' involved in the business of mining, agriculture and auto trade, choosing difficult environments of Africa and Latin America as a launching pad. The group currently is leveraging usage of cutting-edge technology by introducing a block chain - based technology platform into gold mining industry first and then into other areas of the industry which in turn would bring optimisation and transparency into mining companies, investors and governments.

The said Company since its inception has been involved in the business of Export and Import and is one of the leading importer-exporter of Ferrous & Non-Ferrous Metals in the Country. The Company has Trading Offices / Business Associates in different parts of Globe besides India.

The management strongly believes in the theory of building a loyal customer base.

The Company keeping in mind and avenues India offers in the field of Real Estate specially offering "***Housing for All @ 2022***" has decided to diversify its activities by foraying in the Real Estate Sector. There exists immense potential in the country for development of **'Affordable Residential Plotted and Group Housing Colony's'** which in turn is supported by the ***'Pradhan Mantri Awas Yojna (PMAY)'***.

The Board of Directors of the Company as on date with their Address, PAN Card and Aadhaar Card details are enlisted hereunder –

S. No.	Name & Address	Gender	Date of Birth	Aadhaar Card No.	PAN Card No.
1	Mr. Bhushan Kumar Chandna (Chief Executive Officer) S/o Sh. Ram Chandra Chandna R/o DB-36F, Hari Nagar, Maya Puri, Delhi – 110 064	Male	10.5.1974	7282 9135 9076 **Annexure-A(2)**	AAGPC5168H **Annexure-A(3)**
2	Mrs. Rekha Gill W/o Sh. Raj Kumar Gill R/o 62, Sukhdev Vihar, New Friends Colony, New Delhi – 110 025	Female	15.8.1964	7311 5184 1355 **Annexure-A(4)**	AWMPR5783R **Annexure-A(5)**
3	Mrs. Chand Rani Satija W/o Sh. R. S. Satija R/o E-92, Malcha Marg, Chanakya Puri, New Delhi – 110 021	Female	22.9.1942	5260 9896 3640 **Annexure-A(6)**	ABJPR7737H **Annexure-A(7)**
2	Mrs. Renu Satija W/o Sh. Rajesh Satija R/o E-92, Malcha Marg, Chanakya Puri, New Delhi – 110 021	Female	16.2.1972	9697 1954 9006 **Annexure-A(8)**	BPTPS8802K **Annexure-A(9)**
5	Mr. Vikas Ahlawat S/o Sh. Surinder Singh Ahlawat R/o A-603, Garima Vihar, Sector - 35, Noida – 201 307 Gautam Buddha Nagar, U.P.	Male	28.10.1987	2227 1984 8491 **Annexure-A(10)**	ASEPA3782D **Annexure-A(11)**

[Copy of PAN Card and Aadhaar Card of Director's is enclosed as detailed herein above]

The Authorized Share Capital of the Company is Rs. 30,00,00,000/- (Rupees Thirty Crores only) divided into 2,25,00,000 (Two Crore Twenty Five Lakh) Equity Shares of Rs. 10/- each and 7,50,000 (Seven Lakh Fifty Thousand) Preference Shares of Rs. 100/- each. Paid Up Capital as on date is Rs. 9,30,14,592/- (Rupees Nine Crore Thirty Lakhs Fourteen Thousand Five Hundred and Ninety Two only)

The PAN CARD No. of Samsung Overseas Ltd. is AABCS5815K, enclosed as **Annexure – A/14.**

PROJECT LOCATION

The proposed project by the name ***"Satiija Smart Colony – II"*** has its site located at Sector -5 , Village Rattangarh & Jhambra Patti, Tehsil – Shahbad, District Kurukshetra, Haryana and has the connectivity through the proposed 75 meter wide road abutting on the G.T. Road (National Highway # NH-44). The Google Map of the proposed site is appended as under –

ABOUT SHAHBAD

Shahbad, Kurukshetra lies 21 Kms South of Ambala on the Ambala Delhi section of the historical G. T. Road (National Highway # NH-44). It is 22 Kms North of Kurukshetra and has railway station.

It lays on the banks of river Markanda, a tributary of Ghagar and spies to be part of ancient Vedik Saraswati river basin system.

There is also a road from Panchkula via Ramgarh and Dosarka that comes out near Shahbad and there are direct roads to Ladwa, Radore as well as Yamuna Nagar.

Shahbad due to its location has a potential to develop and share the growing industrial load of Ambala and Kurukshetra. In order to relieve the growing pressure of population in Ambala and Kurukshetra, it has been decided by the Haryana Government to promote new Residential Sectors in Shahbad and a step forward towards this has been notification of Draft Development Plan 2025 of Shahbad by the DTCP Haryana vide CCP(NCR)/DDP/(S B D)/2008/769 dated 14th March 2008. Further the Draft Development Plan 2031 of the area is in advanced state of finalization and the same has been approved by the State Level Committee (SLC).

LICENSE PARTICULARS & LAND DETAILS

Samsung Overseas Ltd. have been issued a license no. 70 of 2018 dated 3rd October 2018 valid up to 2nd October 2023 by the Directorate of Town & Country Planning Haryana for setting up of an **"Affordable Residential Plotted Colony"** under 'Deen Dayal Jan Awas Yojna (DDJAY) – 2016' in the revenue estate of Village Rattangarh & Jhambra Patti falling under Sector – 5, Tehsil – Shahbad, District Kurukshetra, Haryana with the land details as under –

S.No.	Village	License No. & Date	Khasra No.	Licensed Area		Licensed Area	License Validity Up to
				K-M	Acres		
1	Rattangarh	70 of 2018; 3.10.2018	517/1	6K-16M	0.85000	**Plotted –** 14.25000 Ac **Commercial –** 0.59375 Ac **Total - 14.84375 Ac** **[Annex – B/1]**	2.10.2023
2			518/1	7K-2M	0.88750		
3			519/1	4K-15M	0.59375		
4			521	5K-14M	0.71250		
5			522	8K-0M	1.00000		
6			523	8K-0M	1.00000		
7			558 min	2K-13M	0.33125		
8			561 min	2K-13M	0.33125		
9			562 min	2K-13M	0.33125		
10			585 min	2K-13M	0.33125		
11			586 min	2K-13M	0.33125		
12			587 min	2K-13M	0.33125		
13			588 min	2K-13M	0.33125		
14			590	8K-0M	1.00000		
SUB - TOTAL				**66K-18M**	**8.36250**		
15	Jhambra Patti		**111//**11/2	4K-0M	0.50000		
16			**111//**12	8K-0M	1.00000		
17			**111//**13	8K-0M	1.00000		
18			**111//**17	4K-2M	0.51250		
19			**111//**18/1	6K-8M	0.80000		
20			**111//**18/2	1K-12M	0.20000		

S.No.	Village	License No. & Date	Khasra No.	Licensed Area		Licensed Area	License Validity Up to
				K-M	Acres		
21	Jhambra Patti	70 of 2018; 3.10.2018	**111//**19	8K-7M	1.04375		
22			**111//**20	8K-14M	1.08750		
23			**111//**23	2K-14M	0.21250		
SUB - TOTAL				**51K-17M**	**6.48125**		
TOTAL				**118K-15M**	**14.84375**		

The land parcel ownership and title is in the name of Samsung Overseas Ltd. as per the revenue records, copy of sale deeds, mutation and jamabandi is enclosed as **Annexure – B/2**.

The External Development Charges amounting Rs. 74,21,875/- (Rupees Seventy Four Lakhs Twenty One Thousand Eight Hundred and Seventy Five Only) has been paid by the Company.

PROJECT PLANNING PROPOSITION

Samsung Overseas Ltd. proposes to develop ***"Satiija Smart Colony – II"*** comprising of the modern facilities, namely,

a) Water Supply System comprising of dual plumbing to conserve the raw water needs and recycle the waste water from sewage treatment plant for flushing, horticulture and pavement washing, etc.;

b) A low maintenance and self sustaining sewerage system to be laid using SW Pipes and drainage system using RCC Pipes designed all around the colony;

c) Rain Water Harvesting system designed using modern technology to reduce rain water runoff in the parks and green areas as a combination to the conventional system. This in turn proposes effective use of rain water by percolation of water laterally to keep the parks and green areas moist with lower watering needs.

d) Sufficient water supply through Underground Tank (UGT) and submersible pumping / distribution system shall be provisioned in the colony.

e) The Parks and Green Spaces shall be landscaped in such a way to provide walkways beautifully hardscaped to enable usage by all sections of demography, be it children, house wives or senior.

f) Pedestrian Walkways on either side of the 24 meter wide road passing through the licensed area as well as along the 9 wide roads sections shall be provided for senior citizens and other sections of the society to unwind themselves.

g) Motorable roads with 5.50 meter width WBM and bituminous top shall be planned for easy manoeuvrability within the colony.

h) All the streets shall be lighted using solar energy operated Light Emitting Diode (LED) lamp fittings to ensure safety and comfort to the residents.

i) Dedicated Community Facility area shall be provided in the colony as per policy norms to be handed over to Government of Haryana.

j) Commercial area has been provisioned in the colony as per policy to cater to daily needs and necessities being met at a walking distance. Also a milk booth is being proposed in the colony.

k) A robust power distribution system with independent Feeder Pillars for each block shall be laid, in turn connected to LT distribution panels fed by outdoor transformers in the colony to ensure stable power supply to the residents.

l) A collection tank for Sewage shall be constructed in the Colony and a modular Sewage Treatment Plant (STP) shall be provided for the time being till the operative load builds up for installation of STP of the designed capacity.

PROJECT PLANNING PARAMETERS

The colony proposed being developed under the 'Deen Dayal Jan Awas Yojna (DDJAY) – 2016' of the Government of Haryana shall have plot sizes varying between 102.31 – 159.79 square yards (i.e., 85.54 sq. mtr. - 133.60 sq. mtr.).

The pricing of the plots is envisaged in a manner to enable the buyers avail the present provisions of the Government of India offering subsidy under the '***Pradhan Mantri Awas Yojna (PMAY)***' and thus make the dream home of the buyer even more affordable. It is pertinent to place on record that the design and planning of the facilities is made in such a way that the larger section of the society enjoys the basic facilities provided in the regular townships.

The land area utilization under various heads with the efficiency proposed being achieved in the colony is detailed hereunder –

LAND AREA ALLOCATION & EFFICIENCY @ 14.84375 Acres

AREA CHART OF LICENSED COLONY (DDJAY) – License No. 70 of 2018					
S. NO.	PARTICULARS	PERMISSIBLE AS PER POLICY		PROPOSAL OR ACHIEVED	
		(IN ACRES)	%	(IN ACRES)	%
I	AREA OF THE SCHEME	5.0 TO 15.0		14.84375	

S. NO.	PARTICULARS	PERMISSIBLE AS PER POLICY		PROPOSAL OR ACHIEVED	
		(IN ACRES)	%	(IN ACRES)	%
II	AREA FALLING UNDER75.0 MT. WIDE ROAD			0.32700	
III	AREA FALLING IN 50.0 MT. GREEN BELT			0.16400	
IV	BALANCE AREA (I-II-III)			14.35275	
V	50% AREA UNDER 75.0 MT. WIDE ROAD AND IN50.0 MT. GREEN BELT [(II+III)/2]			0.24550	
VI	**NET PLANNED AREA**			**14.59825**	
VII	**AREA UNDER PLOTS**	**8.90493**	**61.00%**	**7.27839**	**49.86%**
VIII	**MAX. AREA UNDER COMMERCIAL**	**0.58393**	**4.00%**	**0.45010**	**3.08%**
IX	**TOTAL SALEABLE AREA**	**9.48886**	**65.00%**	**7.72850**	**52.94%**
X	**OPEN SPACE OR PARKS** (OF LICENSED AREA)	**1.11328**	**7.50%**	**1.11328**	**7.50%**
XI	**AREA UNDER COMMUNITY FACILITY**(OF LICENSED AREA)	**1.48438**	**10.00%**	**1.48494**	**10.00%**

***N.B.**: The Saleable Area is calculated as a percentage of Net Planned Area whereas the Area under Open Spaces or Parks and Community Facility is tabulated on Licensed Area as per Policy.*

Details of Land Areas falling under Various Heads @ 14.84375 Acres –

	Total Area (in SQM)	Total Area (in Acres)	% w.r.t. Licensed Area
Plots (260 Nos.) @ 49.86% of Net Planned Area	29,454.64	7.27840	49.03
Commercial @ 3.08% of Net Planned Area	1,821.50	0.45010	3.03
Total Saleable Area	***31,276.14***	***7.72850***	***52.06***
Green Area			
Organized - Green # 1 & 2 (7.50% of Licensed Area)	4,505.30	1.11328	7.50
Incidental Green # 1 & 2	201.97	0.04991	0.33
Total Open Spaces / Green Area	***4,707.27***	***1.16319***	***7.83***
Community Facility Area	***6,009.33***	***1.48494***	***10.00***
Services Area			
STP	399.85	0.09881	0.67
UGT	176.25	0.04355	0.29
	576.10	***0.14236***	***0.96***
Electrical Sub-Station (ESS) Area			
Electrical Transformer Area	160.80	0.03974	0.27
	160.80	***0.03974***	***0.27***
Milk Booth	***27.50***	***0.00680***	***0.05***
Roads			
24 mtr	1,347.59	0.33300	2.25
9 / 18 mtr	9,391.32	2.32040	15.64
	10,738.91	***2.65340***	***17.89***

	Total Area (in SQM)	Total Area (in Acres)	% w.r.t. Licensed Area
Pavements	***5,581.93***	***1.37932***	***9.29***
Area falling under 75.0 MT. Road & 50.0 MT. Green Belt (50%)	***993.50***	***0.24550***	***1.65***
Total	**60,070.58**	**14.84375**	**100.00**

PLOT – TYPE WITH AREA @ 14.84375 Acres

DETAILS OF PLOTS						
TYPE	**PLOT NO.**	**PLOT SIZE**		**AREA (IN SQ.MT.)**	**NO. OF PLOTS**	**TOTAL AREA (SQ.MT.)**
		WIDTH (METERS)	**LENGTH (METERS)**			
A	24	8.35	16.00	133.60	1	133.60
B	91	7.06	17.75	125.32	1	125.32
C	101 to 104	7.28	17.20	125.22	4	500.88
D	243&260	7.30	16.85	123.01	2	246.02
E	42	6.80	17.86	121.45	1	121.45
F	43 to 90	6.75	17.75	119.81	48	5750.88
G	25 to 41	6.70	17.86	119.66	17	2034.22
H	92 to 100	6.90	17.20	118.68	9	1068.12
J	244 to 259	6.90	16.85	116.27	16	1860.32
K	134	6.87	16.85	115.76	1	115.76
L	135 to 170	7.00	16.20	113.40	36	4082.40
M	105 to 133	6.70	16.85	112.90	29	3274.10
N	20 to 23 & 171 to 242	7.00	16.00	112.00	76	8512.00
P	1	6.88	13.06	89.85	1	89.85
Q	2 to 19	6.55	13.06	85.54	18	1539.72
TOTAL					**260**	**29454.64**
					ACRES	**7.27839**

DENSITY CALCULATION @ 14.84375 Acres

S. NO.	DESCRIPTION		UNITS
1	TOTAL NO. OF PLOTS	260	Plots
2	NUMBER OF PERSONS IN 1 PLOT	13.5	Persons
3	TOTAL NO. OF PERSONS	3510	Persons
4	NET PLOT AREA	14.59825	Acres
5	DENSITY ACHIEVED	240.440	PPA

COMPLIANCE OF POLICY PARAMETERS

In compliance of the Deen Dayal Jan Awas Yojna – ***Affordable Plotted Housing Policy 2016*** for Low and Medium Potential Towns issued by Town & Country Planning Department, Haryana vide Memo No. PF-27A/2700 dated 8th February 2016, Samsung Overseas Ltd. has freezed the following plots till the development works of the colonies are completed –

DETAILS OF FREEZED AREA AS PER POLICY, i.e., 50% RESIDENTIAL PLOTTED AREA @ 14.84375 ACRES (License No. 70 of 2018)

S. NO.	DESCRIPTION				AREA	
					(SQ. MT.)	(ACRES)
1	Plots Area				29454.64	7.27839
2	50% of Plot Area				14727.32	3.63920
KHASRA NO.	PLOT NO.	PLOT SIZE		AREA (SQ.MT.)	NO. OF PLOTS	TOTAL AREA (SQ.MT.)
		WIDTH (METERS)	LENGTH (METERS)			
Falling in Village Rattangarh						
587 min	4 to 10	6.55	13.06	85.54	7	598.78
588 min	11 to 19	6.55	13.06	85.54	9	769.86
562 min	20 to 23	7.00	16.00	112.00	4	448.00
	24	8.35	16.00	133.60	1	133.60
561 min	25 to 33	6.70	17.86	119.66	9	1076.94
558 min	34 to 41	6.70	17.86	119.66	8	957.28
	42	6.80	17.86	121.45	1	121.45
522 min	43 to 51, 62 to 70 & 71 to 79	6.75	17.75	119.81	27	3234.87
523 min	52 to 61 & 80 to 84	6.75	17.75	119.81	15	1797.15
	92 to 100	6.90	17.20	118.68	8	949.44
521 min	85 to 90	6.75	17.75	119.81	6	718.86
	91	7.06	17.75	125.32	1	125.32
519 min	105 to 114	6.70	16.85	112.90	10	1129.00
518 min	115 to 124	6.70	16.85	112.90	10	1129.00
517 min	125 to 133	6.70	16.85	112.90	9	1016.10
	134	6.87	16.85	115.76	1	115.76
Falling in Village Jhambra Patti						
111//17	101 to 104	7.28	17.20	125.22	4	500.88
TOTAL					130	14822.29
					Acres	3.66266
ACHIEVED					50.32%	

Further, in compliance of the said policy – Samsung Overseas Ltd. has mortgaged 15% of the residential plotted area towards Internal Development Works (IDW) whose details are as under -

DETAILS OF MORTGAGED AREA AS PER POLICY - 15% RESIDENTIAL PLOTTED AREA @ 14.84375 ACRES (License No. 70 of 2018)

S. NO.	DESCRIPTION				AREA	
					(SQ. MT.)	(ACRES)
1	Plots Area				29454.64	7.27839
2	15% of Plot Area				4418.20	1.09176
KHASRA NO.	PLOT NO.	PLOT SIZE		AREA (SQ.MT.)	NO. OF PLOTS	TOTAL AREA (SQ.MT.)
		WIDTH (METERS)	LENGTH (METERS)			
Falling in Village Rattangarh						
522 min	50 to 51 & 62 to 63	6.75	17.75	119.81	4	479.24
523 min	52 to 61 & 82 to 84	6.75	17.75	119.81	13	1557.53
521 min	85 to 90	6.75	17.75	119.81	6	718.86
521 min	91	7.06	17.75	125.32	1	125.32
523 min	92 to 100	6.90	17.20	118.68	9	1068.12
Falling in Village Jhambra Patti						
111//17	101 to 104	7.28	17.20	125.22	4	500.88
TOTAL					37	4449.95
					Acres	1.09961
ACHIEVED					15.11%	

SANITARY ENGINEERING SERVICES

Water supply and waste water disposal constitute a very important part of the services in a township. Maintenance of hygiene and cleanliness are indispensable to the well being of the occupants as a whole.

It is proposed to design the services, storage capacities and piping network of the township in totality. It is proposed to locate all the pumps and equipments in the pump room which shall accommodate all major pumps and equipments and electrical panels, etc.

WATER SUPPLY SYSTEM

Design Parameters

The scheme has been designed for population of approximately 3510 persons for housing in the colony.

Total Water Requirement

The total water requirement is proposed to be catered by an underground water tank. The water requirement as per I.S. specifications and Government manuals shall be as below:

The rate of water supply per head / day has been taken as 135 + 40.5 (U.F.W.@ 30%) = 175.5 litres as per HSVP norms. In addition to above, necessary provisions of water for community facility and parks etc. have been taken into account for calculating the maximum quantity of water requirement.

WATER REQUIREMENT FOR PLOTTED COLONY UNDER DDJAY @ 14.84375 ACRES

S. No.	Unit Type	Category as per latest NBC	Total No. of Plots	Total Area (in Sqm)	Persons considered per plot as per HSVP norms	Total Popula-tion	LPCD Factor for Pota-ble Water Req. @ 67 %	LPCD Factor for Flushing Water Req. @ 33 %	Potable Water Require-ment (LPD)	Flushing Water Require-ment (LPD)	Total Water Require-ment (LPD)
I.	**DOMESTIC WATER DEMAND**										
1	**Plots**	Res.	260		13.5	3510	115.57	56.93	405651	199824	605475
2	**Commercial Block**	Business		1821.5 Sqm or 0.45010 Acre			32000 Ltr./Acre		9650	4753	14403
3	**Community Building**			6009.33 sqm or 1.48494 Acre			25000 Ltr./Acre		24873	12251	37124
	Total								**440174**	**216828**	**657002**
	Grand Total								**4,40,174**	**216828**	**6,57,002**
	Say in Cum/day								**440 KLD**	**220 KLD**	**660 KLD**
II.	**HORTICULTURAL WATER DEMAND**										
	For approx. 30 % of Total site area approx. 15 Acre @ 15000 litre/ Acre(say)										67500
	Total, Say (in Cu.m. per day)										**70 KLD**
	TOTAL WATER REQUIREMENTS FOR ALL PURPOSES										**730**

III.	**TUBE WELLS**		
(a)	**Yield**	**15**	**KL/Hr**
(b)	**Working Hours per day**	**16**	**Hrs/Day**
	Discharge per Tube well	**240**	
(c)	**Total water demand**	**660**	**KLD**
(d)	**Number of Tube wells required.**	**2.75**	
	(Water Demand/Discharge/Hours working per day)		
	Total	**2.75**	**Nos.**
	Say	**3.00**	**Nos.**
(Water to the proposed development is to be supplied by HSVP and it is proposed to install the tubewells for augmentation/standby purposes).			
IV.	**PUMPING MACHINERY FOR TUBEWELLS**		
(a)	**Gross Working Head**	**70**	**Meters**
(b)	**Average fall in S.L**	**2**	**Meters**
(c)	**Depression Head**	**6**	**Meters**
(d)	**Friction loss in main**	**10**	**Meters**
	Total	**88**	**Meters**
(e)	**Discharge**	**15000**	**LPH**
(f)	**Horse Power**	**8.15**	**HP**
	HP = (15000 X 88 X 1)/(60 X 60 X 75 X 0.6)		
	Say	**10.00**	**HP**
V.	**UNDER GROUND**		
(a)	**Total water demand (Daily for Domestic purposes)**	**440**	**KLD**
(b)	**Proposed capacity of underground tanks (Raw + Domestic) for domestic use.**		
	(25+33)%=58% (SAY 60%) Storage 264 KLD Say 300 KLD	**300**	**m^3**
(c)	**Proposed capacity of underground static tank for fire =100X √(3510/1000)=187.34 KLD (Say 200 KLD)**	**200**	**m^3**
	TOTAL	**500**	**m^3**
VI. (A)	**BOOSTING MACHINERY (Water Supply Pumps)**		
(a)	**Daily Domestic Water Demand**	**440**	**m^3 /day**
(b)	**Discharge per hour @ 8 hr. pumping / day**	**55.00**	**m^3 /Hr**
	Say	**920.0**	**LPM**
(c)	**No. of Working pump**	**3.0**	
(d)	**Proposed Pump discharge (Working)**	**306.67**	**LPM**
	Say	**350.00**	**LPM**
	Gross Working Head		
(a)	**Suction lift – positive suction**	**6**	**Meters**
(b)	**Frictional Loss in Mains & Specials**	**9**	**Meters**
(c)	**Max Clear Head required**	**35**	**Meters**
	Total	**50**	**Meters**
(g)	**H.P. of each pump required**	**6.48**	**HP**
	Pump H.P.		
	Say	**7.50**	**HP**

VI. (B)	BOOSTING MACHINERY (Flushing & Garden Supply Pumps from STP)		
(a)	Daily Flushing & Horticultural Water Demand.	290	m^3/day
(b)	Discharge per hour @ 8 hr. pumping / day	36.25	m^3 /Hour
	Say	610.00	LPM
(c)	No. of Working pump	2	
(d)	Proposed Pump discharge (Working)	305.00	LPM
	Say	350	LPM
	Gross Working Head		
(e)	Suction lift – positive suction	6	Meters
(f)	Frictional Loss in Mains & Specials	9	Meters
(g)	Max Clear Head required	35	Meters
	Total	50	Meters
(h)	H.P. of each pump required (Pump H.P.)	6.48	HP
	Say	7.5	HP
VII.	GENERATING SETS		
1	HP of Tube well pump (3 Nos. of Tubewells * 10 HP of each Tubewell)	30.00	
2	HP of Domestic water supplyPump (3 Nos. of pumps * 7.5 HP of each pump)	22.50	
3	HP of Flushing water supply Pump (2 Nos. of pumps * 7.5 HP of each pump)	15.00	
4	Add misc.	5.00	
	Total	72.50	HP
	in KVA	81	KVA
	SAY	85	KVA

Source of Water

The source of water supply in this area is tube well as underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth, the average yield of Tube wells, with approximate 60' to 80'; strainer will be about 15 KL per hour. 3 Nos Tube wells are required to cope with the daily requirement of water for the initial period of 5 years by which time canal water is expected.

Tube Wells

The proposed tube wells shall be 510 mm bore drilled with reverse rotary rig and installed with 80 mm i/d housing pipe and 50 mm i/d slotted tube as strainer. The provision taken in the estimate under the sub-head tube well includes the cost

of pea gravel packing. The lift of tube well is limited due to incrustation and rusting of strainer. Therefore, out of these tube wells the drilling of tube wells will be done for 1 No tube wells and further tube wells will be drilled as the demand develops till the scheme is handed over the department or till the canal filtration scheme starts supplying water, whichever is earlier.

Pumping Chamber and Pumping Equipments

It is proposed to occupy each tube well with electricity driven pumping set-Electro type or submersible pump capable of delivering about 15,000 Litres per hour. It is also proposed to equip 2 Nos. pumping sets with stand by diesel gen set engines for operation during failure of electricity at four locations. It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

Underground Storage Tanks

Underground storage tank for one day of total daily demand of water supply has been proposed in the scheme. The same shall be fed through HSVP mains canal supply or through Proposed Tube wells lines if possible.

Considering minimum requirement of storage for one full day in the underground tanks (excluding for horticulture purpose), the capacity in underground tanks shall be as follows:

S. No.	Total Water Requirement	In 14.84375 Ac Area
(a)	Raw Water Tank	125 KLD
(b)	Treated Water Tank	175 KLD
(c)	Fire Tank	200 KLD

Distribution System

The distribution system for this development have been designed as per the requirement of plot & commercial complex @ 3.0 times the average rate of flow on "Hazen Williams" formula with C-100. Necessary provision for laying C.I. / D.I. pipes only conforming to relevant IS standards along with valves and specials has been made in the Estimate.

Rising Main

Rising mains from HSVP water main on sector road to water works have also been designed and provision for C.I. (class LA)/DI pipe line has been made in the Estimate.

Estimate of Bore Well

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. I		**Water Supply**				
Sub Head No. I		**Head Works**				
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Boring and installing tube well with reverse Rotary Rig Complete with pipe and strainer to a depth of about 120 meter in all respect 3 Nos. for overall 14.84375 Acre Site Area	3 Nos.	@	1000000.00	Rs.	30.00
2	Provision for rising mains, connecting tube wells with UGT Tanks including Valve & NRV					
a	100 mm dia	285 mtrs.	@	1250.00	Rs.	3.56
b	150 mm dia	10 mtrs.	@	1575.00	Rs.	0.16
3	Providing Tube well Submersible Pumps: Capacity 15000 LPH at 88 M Head each	3 Nos.	@	200,000.00	Rs.	6.00
4	Construction of UG Tanks	500 KL	@	3500.00	Rs.	17.50
5	Provision of Construction of Tube well Chambers of size 1.5x1.5x1.5 m tube well	3 Nos.	@	100000.00	Rs.	3.00
6	Provision for Carriage of material & other unforeseen items	L.S.	@	100000.00	Rs.	1.00
7	Provision for footpath, lawn, boundary wall around tubewell & waterworks	L.S.	@	300000.00	Rs.	3.00
8	Construction of boosting chamber	L.S.	@	500000.00	Rs.	5.00

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
9	Provision for staff offices & for maintenance staff	L.S.	@	1000000.00	Rs.	10.00
	TOTAL				**Rs.**	**79.22 Lacs**

Estimation of Pumping Machinery

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.48375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)			
Sub Work No. I			**Water Supply**
Sub Head No. II			**Pumping Machinery**
Sl No	**DESCRIPTION**		**AMOUNT (In Lacs.)**
1	Providing and installing electricity driven Domestic Transfer pumping set capable of delivering about 350 LPM of water against a total Head of 50 M complete with motor and other accessories including Valve(7.5 HP) & NRV. (3 Working + 1 Stand by) 4 Nos. @ 150000/- each	Rs.	6.00
2	Providing and installing electricity driven Flushing & Garden pumping set capable of delivering about 350 LPM of water against a total Head of 50 M complete with motor and other accessories including Valve(7.5 HP) & NRV. (2 Working + 1 Stand by) 3 No. @ 150000/- each	Rs.	4.50
3	Provision for making foundations and erection of Pumping Machinery (Lumpsum)	Rs.	1.00
4	Provision for electric service connection including electrical fittings for tube-well and boosting chamber etc. (Lumpsum)	Rs.	2.50
5	Provision for pipes, valves and specials inside boosting chamber. (L.S)	Rs.	2.00
6	Provision for carriage of material	Rs.	0.50
7	Provision for formation of plant etc.	Rs.	1.00
8	Provision for diesel engine generator set each for standby arrangement for tubewell is boosting pump craft etc.(85 KVA)	Rs.	6.50
	TOTAL	**Rs.**	**24.00 Lacs**

Estimation of Rising Main from Municipal Corporation Supply Point

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. I						**Water Supply**
Sub Head No. III						**Rising Mains**
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing, laying, jointing and testing pipe lines including Cost of excavation etc. complete in all respects - 100 mm dia. G.I. Pipe	395 m	@	1250	Rs.	4.94
2	Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respects - 100 mm i/d	1 No.	@	12000	Rs.	0.12
3	Providing and fixing indicating plates for sluice valve and air valves	1 No.	@	1000	Rs.	0.01

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
4	Provision for carriage for materials (Lump Sum)				Rs.	0.25
5	Making Water Supply Connection including road cut with HUDA master line				Rs.	1.00
6	Provision for roads cut and make up good condition				Rs.	1.00
	TOTAL				**Rs.**	**7.32 Lacs**

Estimation of Water Supply (Domestic & Flushing) Distribution System

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. I					**Water Supply Dom.+Flushing**	
Sub Head No. IV					**Distribution system**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing, Laying, jointing and testing G.I pipe line including fittings, valves, cost of excavation etc. complete in all respect - G.I Pipe 100 mm	4,330 mtr.	@	1250	Rs.	54.13
2	Providing and fixing 20 mm dia. irrigation hydrant Valve, Chamber & Cover etc. complete in all respect. 10 Nos. @ Rs. 3500/ each	10 Nos.	@	3500	Rs.	0.35
3	Provision for carriage of materials (Lump Sum)				Rs.	2.00
4	Provision for cutting of road and making its good condition				Rs.	1.00
5	Provision for air valve 4 No. and sluice valve complete with masonry chamber (L.S)				Rs.	2.00
6	Providing & Fixing indicating plates for sluice valve, air valve (L.S)				Rs.	0.20
7	Providing & Fixing fire hydrant complete with masonry chamber(L.S)				Rs.	0.50
	TOTAL				**Rs.**	**60.18 Lacs**

SUB WORK No. 1 (Abstract of Cost)		**Water Supply & Fire Fighting**	
1	Sub Head No. 01	Head Works	Rs. 79,22,000
2	Sub Head No. 02	Pumping Machinery	Rs. 24,00,000
3	Sub Head No. 03	Rising Main	Rs. 7,31,750
4	Sub Head No. 04	Distribution System Dom. & Flushing	Rs. 60,17,500
TOTAL			**Rs.1,70,71,250**
Add 3% contingencies & PH Charges			Rs.5,12,137.50
TOTAL			**Rs.1,75,83,388**
Add 49% Departmental charges + Price escalation			**Rs. 86,15,860**
TOTAL			**Rs.2,61,99,247**
Say			**Rs. 261.99 Lacs**

Quality of Water Supply

Since, the water will be required for different purposes, i.e., for drinking, cooking, in the toilets, etc. it has to be of a required standard quality. The exact treatment of water will be suggested after getting the municipal and bore well water tested for potability.

However, as a standard, the water shall be passed through multi-grade filter disinfection (U.V.) and chlorinated prior to its supply to the plots.

It is also advisable to maintain a strict monitoring system on the quality of the water during the operation of the system.

Water Supply System

The water from the potable water supply line will be brought into Compartment # 1, which will serve exclusively as a raw water tank of capacity as suggested herein above. The water from these tanks shall be taken for treatment through filtration disinfection (U.V.) and chlorination units and then stored in Treated Water Tank Compartment No. 2 of capacity as suggested herein above.

Water from the Compartment No. 2 termed as domestic water tank shall transfer the water through Pumping System with ring main system to domestic water overhead tanks of the plots and the water shall in turn be supplied to the pantries and other fixtures from domestic water overhead tanks of the plots by gravity.

An underground additional ring main shall be provided along the roads which shall transfer the treated flushing water from STP through Pumping System with additional ring main system to flushing water overhead tanks of the plots and the flushing water shall in turn be supplied to the toilets from the flushing

overhead tanks of the plots by gravity. The underground additional ring main will also be connected to the garden hydrant pumps from the flushing water tank at STP. Garden Hydrants will be provided on the ring main.

Material for Water Supply

All the external pipes to be used for water supply shall be of Ductile Iron / Ductile Iron of 100 mm dia. and above and Galvanized Steel Tubes confirming to I.S.1239 medium class of superior quality for below 80 mm dia. pipes. Fittings shall be malleable iron / brass as applicable.

Valves on branches, main line and pumps shall have Brass Ball Valve / CI butterfly valve of good approved quality, as per requirement.

SEWERAGE SYSTEM

The internal sewer lines have also been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 90 % of the domestic water supply shall find its way into the proposed sewer. All the SW / RCC pipes, sewer has been designed to run half/full/three fourth full.

Estimation for Sewerage System

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. II						**Sewerage Scheme**
Sl No	**DESCRIPTION**	**Qty (in M)**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing, jointing, cutting and testing SW pipe class "A" and lowering into trenches including cost of Excavation, bed concrete, cost of manholes etc. complete in all respect					
	SW pipe 200 to 250 mm i/d avg. depth 1.50 - 4.62 M	1612	@	1500	Rs.	24.18
2	Rising Main From STP To MH – 150 mm Dia	95	@	1575		1.50
3	STP Cap. 600 KLD up to tertiary level (L.S)				Rs.	81.00
4	Provision for making HUDA Connection on main line (L.S)				Rs.	1.00
5	Provision for watering & lighting				Rs.	1.00
6	Provision for vent pipe				Rs.	2.00
7	Provision for cutting of roads & making good condition				Rs.	1.00

Sl No	DESCRIPTION	Qty (in M)		Rate		AMOUNT (In Lacs.)
8	Provision for timbering & shovering (L.S)				Rs.	1.00
	TOTAL				**Rs.**	**112.68**
	Add 3% contingencies & P H charges				**Rs.**	**3.38**
	TOTAL				**Rs.**	**116.06**
	Add 49% Departmental, price escalation, unforeseen & admin charges				**Rs.**	**56.86**
	TOTAL				**Rs.**	**172.92 Lacs**

Appurtenances & Material's Specifications

(a) Pipes

SW Pipe (For Sewer Lines)

Minimum 200mm dia SW pipe will be used for external services

For road crossings 150 mm SW pipe will be used

All road crossing pipes will be in cased all round by cement concrete of 1:3:6 and other pipe will be in cased up to Haunches.

(b) Manholes

The manholes shall be constructed of brick masonry as per standard specifications of National Building Code.

Minimum Depth of Manhole = 0.9 m – 1.67 m depth for 0.91 m dia.
1.68m – 2.29m dia depth for 1.22m dia
2.30m and above for 1.52m dia

Spacing

Manholes shall be provided at all junctions, change of directions, change in diameters, as per connection requirement from every house / unit.

A distance of 30 meters on the main trunk sewer lines, depending on dia of pipe and local conditions.

Manhole Covers

Medium / Heavy duty for manholes.

SEWAGE TREATMENT PLANT

It is proposed to treat the domestic sewage water in a specific manner through a properly planned sewage / effluent treatment plant. The objective is to stabilize the decomposable organic matters present in sewage so as to get an effluent and sludge having characteristics which are within safe limits, and which can be recycled and reutilized for various purposes to help in maintaining the ecology of nature and save energy resources. The treatment process for sewage / effluent and the location of the final waste disposal shall be based on the following considerations:

- Use of Treated Sewage
- Wind Direction
- Availability of suitable land
- Initial cost of the system
- Recurring cost of the system

Salient Features of STP

a) **Characteristics of Influent**

- B.O.D. (5 days at 20^{o}C) (mg / lit) --- 250 – 300
- Suspended Solids (mg / lit) --- 400 – 600
- pH --- 6.5 – 8.5

b) **Characteristics of Effluent (after treatment)**

- B.O.D. (5 days at 20^{o}C) (mg / lit) --- Less than 10 mg / lit
- Suspended Solids (mg / lit) --- Less than 30 mg / lit

The technology suggested to be used for Sewage treatment will be as follows:

Process Description: FAB Process

Sewage generated from the township will reach the last manhole of the trunk sewer line from where it shall be passed through a bar screen of suitable size before entering the equalization cum collection tank. There shall be suitable arrangement for cleaning and lifting the coarse material fromt he platform near the screen chamber.

From equalization tank the sewage shall be lifted through submersible automatic control pumps into adjoining FAB aeration tank. The equalization tank shall also have provision of the aeration system to keep the sewage in the homogeneous condition.

In the FAB aeration tank of required capacity waste water will be mixed with micro-organisms in presence of dissolved oxygen. Micro-organisms will assimilate organic impurities. The FAB aeration tank will be supplied through two positive displacements (roots type) air blowers (1 working + 1 standby) located outside the tank. Submerged air diffusers will provide mixing and oxygen for the needs of micro-organisms. The blowers will be sized to maintain dissolved oxygen level in the aeration tank of approximately 2 mg / lit.

From the FAB aeration tank mixed liquor will flow with gravity in to adjoining plate settler of required capacity. The solids will settle in the plate settler tank. A sludge return pump will be provided for pumping the settled sludge from plate settler tank back to the aeration tank. Plate settler tank will also be provided with skimmer system to pump floating scum back to the aeration tank to keep the plate settler surface clean.

An overflow weir with scum baffle will be provided in plate settler to take treated waste water out of the plate settler.

From the plate settler, treated waste water will flow with gravity into adjoining clarified water tank. From this tank the water will be lifted with a

submersible pump and passed through a pressure sand filter and an activated carbon filter and stored in the treated water tank. Water from this tank will be lifted with suitable pumps for further use for flushing and horticulture purpose. In case of extra effluent the arrangement shall be made to dispose off the same into municipal sewer.

Excess sludge from the plate settler tank will be taken periodically into sludge holding tank. In this tank sludge will be aerated for self-stabilization. Air will be shut off periodically and superannuate water will be transferred to the aeration tank creating stabilized sludge. The stabilized sludge shall be dried in filter presses and used as manure and extra will be carted away.

STORM WATER / RAIN WATER DRAINAGE DISPOSAL SYSTEM

It has been proposed to lay underground RCC pipe. The intensity of rain fall has been taken as ¼th inch per hour. The internal storm water drains will be joined into external storm water drainage to be laid by HSVP/MC on sector dividing roads. Necessary provision for curves and channels has been estimated. A minimum size of 400 mm RCC storm water line will be provided.

Estimation for Storm Water / Rain Water Drainage System

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. III					**Drainage Scheme RCC Main Pipe Drain**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing and laying R.C.C. pipe drain class NP-3 with cement joint, Catch Basins & Road Gullies, manholes excavation etc complete in all respect					
	400 mm dia.	1427	@	2000	Rs.	28.54
	500 mm dia.	131	@	3000	Rs.	3.15
2	Providing Rain Harvesting arrangements	4 Nos.	@	500000	Rs.	20.00
3	Provision for Carriage of Material (L.S)				Rs.	2.00
4	Provision for watering & timbering and unforeseen (L.S)				Rs.	1.00

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
5	Provision for connection with HSVP line				Rs.	0.50
6	Provision for Road gullies and cement (L.S)				Rs.	5.00
7	Provision for watering & lighting				Rs.	1.00
8	Provision for temporary disposal arrangements till HSVP services are provided.				Rs.	5.50
	TOTAL				**Rs.**	**66.69**
	Add 3% contingencies & P H charges				**Rs.**	**2.00**
	TOTAL				**Rs.**	**68.69**
	Add 49% Departmental, price escalation, unforeseen & admin charges				**Rs.**	**33.66**
	TOTAL				**Rs.**	**102.35 Lacs**

RAIN WATER HARVESTING

The main emphasis given in the planning of the storm water drainage system is on recharging the underground aquifer of the area while having the safe disposal of storm water without flooding the campus. A network of storm water disposal drains will be planned which will finally dispose off into a percolation well for direct injection of collected storm water into the ground water. Bar screens and slit traps shall be incorporated before percolation wells to remove the silt, heavier particles and other objectionable material which can cause the chocking of the percolation well. The over flow of these rain water harvesting pits will be interconnected and then finally connected to the trunk storm water pipe line.

ROADS AND PAVEMENTS NETWORK

Estimation for Roads & Pavements Work

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.84375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMBRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Provision for leveling & earth filling as per site conditions	14.84375 Cum	@	150000	Rs.	22.27
2	Provision for Granular Sub Base 200 mm, 250 mm thick stone aggregate, 50 mm thick MB, 20 mm thick premix carpet with seal coat (MSS)	10653 sqm	@	1200	Rs.	127.84
3	Provision for Kerbs & channels of CC 1:2;5:5 complete in all respect	5667 mtr	@	600	Rs.	34.00
4	Provision for Pavement in commercial area and pavements	910.78 sqm	@	600	Rs.	5.46
5	Provision for traffic light arrangement (L.S.)				Rs.	1.00
6	Provision for carriage of materials, Guide Map Plot indicator etc. (L.S.)				Rs.	2.00
	TOTAL				**Rs.**	**192.57**
	Add 3% contingencies & P E charges				**Rs.**	**5.78**

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
	TOTAL				**Rs.**	**198.35**
	Add 49% Departmental, price escalation, unforeseen & admin charges				**Rs.**	**97.19**
	TOTAL				**Rs.**	**295.54 Lacs**

STREET LIGHTING WORK

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.8375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. V					**Street Lighting**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing street lighting on roads as per standard specifications on HVPN with CFL.					
	Area = 14.84375 Acres	14.8375	@	2,00,000.00	Rs.	29.69
	TOTAL				**Rs.**	**29.69**
	Add 3% contingencies & P E charges				**Rs.**	**0.89**
	TOTAL				**Rs.**	**30.58**
	Add 49% Departmental, price escalation, unforeseen & admin charges				**Rs.**	**14.98**
	TOTAL				**Rs.**	**45.56**
	SAY				**Rs.**	**45.56 Lacs**

PARKS & PLAYGROUNDS (HORTICULTURE) WORK

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.8375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. VI					**Plantation & Road Side Trees**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Development of Lawn Area :-					
	a) Trenching the ordinary soil upto depth of 60 cm. including removal and packing of serviceable material and disposing at a lead of 50 M. and making up the trenched area to proper level by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.					
	b) Rough dressing of trenched area.					
	c) Grassing with "doob grass" including watering and maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for moving in rows 7.50 cm. apart in either direction.					
	Area = 14.84375 Acres	14.84375	@	1,50,000.00	Rs.	22.27
2	Providing & Planting of trees with tree guards on roads at 12 m intervals					
	Total Road Length (M.)	1,611				
	Trees @ 12 M. c/c	135				
	Say (2x135) = 270	270				

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
	Cost of One Tree :-					
	Excavation (Rs.) 60/-					
	Manure (Rs.) 90/-					
	Tree Plants (Rs.) 150/-					
	Tree Guards (Rs.) 1000/-					
	Total Cost (each)			1,300		
	Cost of Total trees	270	@	1,300	Rs.	3.51
	TOTAL				**Rs.**	**25.78**
	Add 3% contingencies & P E charges				**Rs.**	**0.77**
	TOTAL				**Rs.**	**26.55**
	Add 49% Departmental, price escalation, unforeseen & adm charges				**Rs.**	**13.01**
	TOTAL				**Rs.**	**39.56**
	SAY				**Rs.**	**39.56 Lacs**

MAINTENANCE CHARGES

PROJECT - AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY ON 14.8375 ACRES AT SECTOR - 5, VILLAGE – RATTANGARH & JHAMRA PATTI, TEHSIL - SHAHBAD, KURUKSHETRA (HARYANA)						
Sub Work No. VII					**Maintenance Charges and Resurfacing of Roads**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Provision for maintenance charges for water supply, sewerage, storm water, drainage, roads, street light, Hort., etc. complete including operation & establishment charges as per HSVP norms for 10 years completion.					
	Area = 14.84375 Acre	14.84375	@	7,50,000.00	Rs.	111.33
2	Provision for resurfacing of roads after first five years of maintenance one layer of 100mm thick WBM compacted to 75 mm thick with 25mm thick premix carpet with seal coat. (Sqm)	3,204	@	600.00	Rs.	19.22
3	Provision for resurfacing of roads after 10 years of Mtc. i.e. 25mm thick premix carpet with seal coat with mechanical paver. (Sqm)	6,630	@	750.00	Rs.	49.73
	TOTAL				**Rs.**	**180.28**
	Add 3% contingencies & P E charges				**Rs.**	**5.41**
	TOTAL				**Rs.**	**185.69**
	Add 49% Departmental, price escalation, unforeseen & adm charges				**Rs.**	**90.99**
	TOTAL				**Rs.**	**276.68 Lacs**

ELECTRICAL SYSTEM

GENERAL

An Affordable Residential Plotted Colony proposed at Shahabad, Kurkushetra consists of following plotted development/ blocks

i) Residential Plots - 260 plots
ii) Commercial Building - 1 plot
iii) Community Centre - 1 plot

POWER SOURCE

Power supply authority is UHBVNL at Kurukshetra.

Individual connection to each plot is provided by UHBVNL. In this case individual plot owner shall apply to UHBVNL for Electrical connection. Developers shall have to take connection from UHBVNL for common services (water supply pump, fire pump, external lighting etc.)

In this case, the responsibility of collection of electricity bills/dues from plot owners shall be of UHBVNL. Operation and maintenance of sub-station including LT Distribution network shall also be responsibility of UHBVNL.

It has been envisaged that the power supply shall be available at the site at 11KV for township from the Local Electric Supply Company (i.e. UHBVNL). The total maximum demand required for this complex for plotted development with basic amenities shall be 1074 KW. 11KV power will be received at individual Substation in the proposed complex (Location of the ESS marking in attached Site plan).

DESIGN CRITERIA

As it is a large development with commercial areas, plotted development and the utilities required for the above areas, the 11KV distribution system shall be designed in the following manner :-

The power will be received at 11KV. This 11KV underground cable shall feed 11KV power to the small Substation for plotted development. 11KV power shall be stepped down to 433V with one or two number of transformers located strategically as per load centres. 433V distribution would occur from LT distribution board inside the substation to various feeder pillars located strategically in the plotted areas.

The following codes and standards (latest edition / revision) will be followed during the designing of electrical installation:

a. B.I.S. Bureau of Indian Standards
b. I.E.R. Indian Electricity Rules
c. NEC National Electric Code

d. Haryana Electricity regulatory commission
e. UHBVNL Sales Circular
f. Electrical Wiring Installation (IS : 732 -1989)
g. Fire safety of Buildings (General) Electrical Installation (IS : 1646 - 1997)
h. Installation & Maintenance of Transformer (IS : 10028 - 1985)
i. Earthing (IS : 3043 - 1989)
j. Regulation laid down by the Electrical Inspectorate.

More over the system will be so designed that it is reliable and optimized to meet not only the present requirement but also suitable for future load growth of an about 5-10% only.

SUBSTATION & LOCATION

OPTION-1 (PSS)

PACKAGE/ COMPACT SUBSTATION (PSS):

Package/ compact substation shall be used for LT power distribution. Each package/ compact substation canopy have 1 no. ring main unit (RMU), 1 no. oil/dry type transformer along with LT panel & capacitor panel . RMU's will be connected in ring main fashion. Package substation shall be proposed to reduce the Electrical substation (conventional type) space. HT/LT installation & testing shall be complied as per I.E. Rules, 1956 and relevant Indian electricity standards & as per UHBVN/ HERC regulation. Transformers shall comply to IS codes reference IS 1180 (level-2) is proposed for stepping down 11/ 0.433KV electrical power for utilization of electric power.

For Community Centre building 11kv will be provided from RMU of PSS-1 & demand Load of community centre building is assumed to 50kW.

Package substation sizes are as follow:

1. 1 no. 1600KVA
2. 1 no. 100KVA

OPTION-2 (Conventional type)

11KV Distribution Sub-station:

- Multiple sub-stations shall be proposed with single transformers as per load center and at least two transformers will be provided for entire township.
- RMU with 11KV VCB feeder for transformer shall be proposed as HT breaker inside each substation.
- Oil type Transformers are proposed in Substation building since this is an independent structure.

- Two substation each Substation building shall be a single storey structure with solid ground floor.
- Transformer shall be outdoor type & located in fenced area around 3X4M.
- Main LT panel shall be provided in sub-station building to feed power to various feeder pillars and external lighting.

L.T. POWER DISTRIBUTION

The LT power from the transformers shall be connected to LT Panel. The LT power from the Substation shall be distributed through **underground** cables and connected to feeder pillars. The power from feeder pillars to the plots shall be laid/ connected by individual owner at their own expenses.

CABLE / OUTLINE SPECIFICATION

C A B L E S

11KV Cables

11KV cables XLPE inner core, copper screened, Trapdoor sheathed, high short circuit rating and low dielectric loss aluminium conductor cables laid underground.

1100 Volts Grade

1.1KV grade cables shall be pvc insulated outer sheathed, pvc insulated and pvc sheathed as inner core and XLPE, insulated core on Aluminium conductor and they will be armoured through GI wire / strips.

H.V. Panels

11KV metal clad integrated panel, dust and vermin proof with incoming drawout type Vaccum circuit breakers and RMU (ring main unit), aluminium busbars, spring operated motorized mechanism, over current and earth fault protective relays, meters and indicating lamps. The outgoing breakers shall have drawout type Vacum circuit breakers.

Transformers

11/0.433 KV Step Down Transformer

Naturally oil cooled with OFF load tap changing switch and Copper wound transformer (ONAN type) with oil temp. Indicator with tripping facility and winding temp. indicator with tripping facility.

(Note: For package substation transformer could be dry type)

L.T. Panels

L.T. Panel shall be dust free, vermin free, free standing manufactured with CRCA sheet and powder coated with incoming air circuit breakers complete with protective relays and outgoing in the form of MCCBs and complete panel shall have aluminium busbars.

Distribution Pillars

Outdoor type lockable type with canopy free standing distribution pillars with MCCB as incoming and MCBs/ Isolators in outgoing feeders and adequate spacing for incoming and outgoing cables.

Earthing

The earthing system shall be based on the conventional Indian earthing system having separate earth protective conductor for neutral system and separate earth protective conductor. The earthingconductors proposed to used are :

- Copper for Transformer and DG Set neutral.
- Galvanised Iron (GI) for body earthing.

STREET LIGHTING

Source of Power

The power shall be received at 433 Volts, 3 phase 4 wire 50 Hz from the Substation.

Distribution

The power for street lighting shall be distributed through distribution boards which are located in various load centers. From the distribution boards, the street lighting shall be connected through PVC insulated aluminium conductor armoured XLPE cables laid in ground of required size, considering voltage drop and current carrying capacity.

Illumination Levels

20- 25 Lux on main roads and 15-20 lux on footpath / parking / service lane/ cycle track will be achieved by using - as per requirement – single arm/ double arm 7m poles with IP 65 fixtures having high efficiency LED lamps (90-100 lumens/Watt) with integral Driver.

Pole Design

7.5 Metres wide roads shall be provided with single arm pole installed on one side of the road.

Energy Conservation

The street lighting shall be operated with timers located in the External Lighting Feeder Pillars.

COMMUNICATION SYSTEMS (VOICE / DATA, INTERNET & TV SYSTEM)

DWC pipe of required size to be laid in ground for cabling of communication & TV system. Manhole also to be provided at suitable location to pull the cable. Cabling & Equipment shall be provided by service provider as per the requirements.

Electrical load

Sr. No.	Area Description	RESIDENTIAL (B- CLASS CATEGORY FOR KURUKSHTERA)						
		Area (Sq. Mtr.)	Area (Marla) 1Marla =25.293Sq. Mtr.	Qty. plots	Connected Load/Unit (KW) as per DHBVN sales circular	Connected load Total (KW)	Diversity Factor	Total Max. Demand (KW)
1 .	Type-A (Plot)	133.60	5.28	1	8	8	0.4	3
2 .	Type-B (Plot)	125.32	4.95	1	8	8	0.4	3
3 .	Type-C (Plot)	125.22	4.95	4	8	32	0.4	13
4 .	Type-D (Plot)	123.01	4.86	2	8	16	0.4	6
5 .	Type-E (Plot)	121.45	4.80	1	8	8	0.4	3
6 .	Type-F (Plot)	119.81	4.74	48	8	384	0.4	154
7 .	Type-G (Plot)	119.66	4.73	17	8	136	0.4	54
8 .	Type-H (Plot)	118.68	4.69	9	8	72	0.4	29
9 .	Type-J (Plot)	116.27	4.60	16	8	128	0.4	51
10 .	Type-K (Plot)	115.76	4.58	1	8	8	0.4	3
11 .	Type-L (Plot)	113.40	4.48	36	8	288	0.4	115
12 .	Type-M (Plot)	112.90	4.46	29	8	232	0.4	93
13 .	Type-N (Plot)	112.00	4.43	76	8	608	0.4	243
14 .	Type-P (Plot)	89.85	3.55	1	6	6	0.4	2
15 .	Type-Q (Plot)	85.54	3.38	18	6	108	0.4	43
			TOTAL PLOTS	**260**	**TOTAL LOAD**	**2034 kW**		**814 kW**
COMMERCIAL AREA LOAD								
Sr. No.	Area Description	Area (acers)	Area (Sqmtr) 1Acers =4046.86 Sq.mtr	Qty. plots	Connected Load/Unit (KW) @ 16kW/sq. m	Connected load Total (KW)	Diversity Factor	Total Max. Demand (KW)
1	Commercial Area	0.45	1821.5	1	291	291	0.6	175
					TOTAL LOAD	**291 kW**		**175 kW**
UTILITY LOADS								
Sr. No.	Area Description	Area (acers)	Area (Sqmtr)			Connected load Total (KW)	Diversity Factor	Total Max. Demand (KW)
1	STP		Assumed load			30	0.5	15
2	External Lighting		Assumed load			12	0.5	6
3	Plumbing		Assumed load			30	0.5	15
					TOTAL LOAD	**72 kW**		**36 kW**
COMMUNITY AREA LOAD								
Sr. No.	Area Description	Area (acers)	Area (Sqmtr) 1Acers =4046.86 Sq.mtr	Qty. plots		Connected load Total (KW)	Diversity Factor	Total Max. Demand (KW)
1	Communitiy area	1.48	6009.3	1		100	0.5	50
					TOTAL LOAD	**100 kW**		**50 kW**
NOTE: Direct 11kV supply feeder to be provided at the entry gate of community centre with a non-extensible RMU								

NET CONTRACT DEMAND FROM STATE ELECTICITY BOARD						
				RESIDENTIAL DEMAND LOAD	814 kW	
				COMMERCIAL AREA DEMAND LOAD	175 kW	
				UTILITY DEMAND LOAD	36 kW	
				COMMUNITY AREA DEMAND LOAD	50 kW	
				TOTAL DEMAND LOAD	1074 kW	
kVA DEMAND FOR ENTIRE PLOTTED COLONY FROM STATE ELECTICITY BOARD @ 0.9 P.F					**1194 kVA**	
TRANSFORMER CALCULATION (FOR RESIDENTIAL, COMMERCIAL, UTILITY)						
				RESIDENTIAL DEMAND LOAD	814 kW	
				COMMERCIAL AREA DEMAND LOAD	175 kW	
				UTILITY DEMAND LOAD	36 kW	
				TOTAL DEMAND LOAD	1024 kW	
REQUIRED KVA RATING @ 0.9 POWER FACTOR & 80% LOADING					1423 kVA	
	SUGGESTED TRANSFORMER CAPACITY				**1600 kVA**	

EXPENDITURE ENVISAGED

SAMSUNG SMART CITY – II (DDJAY) - License No. 70 of 2018					
EXPENDITURE :					
LICENSING COST					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In SQM)**	**Unit Rate (INR) @ per SQM**	**Amount (INR)**
1	Scrutiny Fee (LC-1)	14.84375	60070.58	10/- per SQM	6,00,710.00
2	External Development Charges (EDC)	14.84375	-	5,00,000/- per Acre	74,21,875.00
	TOTAL				**80,22,585.00**
	Cost per SQY				***111.67 per SQY***
CONSULTANT, SURVEY AND TESTING FEE					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In SQM)**	**Unit Rate (INR) @ per SQM**	**Amount (INR)**
1	MKG ENGINEERING SERVICE PVT. LTD. (MEP Consultant)			7,08,000/- L.S.	7,08,000.00
2	Landscape Consultant	14.84375	-	70,000/- per Acre	10,39,063.00
3	Surveying Fee (1,200/- per Ac for Contour Survey + 12,000/- per day for Demarcation)		L.S.	-	4,45,820.00
4	Geotechnical Survey		L.S.	-	1,00,000.00
5	Water Test		L.S.	-	40,000.00
	TOTAL				**23,32,883.00**
	Cost per SQY			***1.57 Lacs per Acre***	***32.47 per SQY***
INFRASTRUCTURE DEVELOPMENT COST					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In SQ. YD.)**	**Unit Rate (INR)**	**Amount (INR)**
1	Laying of Water Supply (Dual Plumbing) System with UGT	14.84375	71,843.75	17,65,002/- per Ac	2,61,99,247.00

S. No.	Particulars	Area (In Acres)	Area (In SQ. YD.)	Unit Rate (INR)	Amount (INR)
2	Laying of Sewage Disposal System with STP	14.84375	71,843.75	11,64,935/-per Ac	1,72,92,000.00
3	Laying of Storm Water Drainage System with RWH	14.84375	71,843.75	6,89,516/- per Ac	1,02,35,000.00
4	Laying of Internal Roads & Pavements	-	19,519.73	19,91,005/- per Ac	2,95,54,000.00
5	Street Lighting	14.84375	-	3,06,930/- per Ac	45,56,000.00
6	Landscaping of Parks + Playgrounds	14.84375	-	2,66,510/- per Ac	39,56,000.00
7	Maintenance Charges (10 Years) with Resurfacing of Roads (Twice at 5 Years interval)	14.84375	-	18,63,950/- per Ac for 10 Years period	2,76,68,000.00
	Services Development & Maintenance Cost			***80,47,848/- per Ac***	***11,94,60,247.00***
8	Electrification (HT / LT & LV) with DWC Pipes	14.84375	-	14,27,028/- per Ac	2,11,82,450.00
9	Solar Power System	14.84375	-	6,27,725/- per Ac	93,17,800.00
10	Meter Room & VCB Room		L.S.	1,28,195/- per Ac	9,19,000.00
	Electrification Development Cost			***21,16,665/- per Ac***	***3,14,19,250.00***
11	Boundary Wall (1,770 Running Meter)	-	-	1,890/- per RM	33,45,300.00
12	Guard Room		L.S.	26,947/- per Ac	4,00,000.00
12	Security System (Boom Barrier, etc.)	-	L.S.	44,126/- per Ac	6,55,000.00
13	Fire Fighting Installations	-	L.S.	22,905/- per Ac	3,40,000.00
17	Signages		L.S.	47,158/- per Ac	7,00,000.00
18	Hardscaped Walkways / Pavers	-	6,675.99	3,23,820/- per Ac	48,06,700.00
19	Play Equipments (in Parks)	-	L.S.	1,01,273/- per Ac	2,76,000.00
	Safety & Security and Social Infrastructure Development Cost			***7,08,918/- per Ac***	***1,05,23,000.00***
	TOTAL				**16,14,02,497.00**
	Development Cost			***108.73 Lacs per Ac***	***2,247.00 per SQY***

GST payable extra on above rates, as applicable.

MARKETING & SELLING COST

S. No.	Particulars	Unit Rate (INR)	Amount (INR)
1	Designing & Printing of Brochures, Pamphlets and Flexi	L.S.	9,50,000.00
2	Photography for Brochure	L.S.	2,00,000.00
2	Designing and Hosting of Website	L.S.	1,50,000.00
3	Advertisement through Social Media / Digital Networking for maximising reach and engagement	L.S.	9,30,000.00
4	Advertisement through Print Media	L.S.	24,10,000.00
5	Advertisement through Hoarding and Television	L.S.	25,00,000.00
6	Charges payable to Advertisement Agency	L.S.	5,00,000.00
7	Brokerage Payable to Channel Partners	7% to 12%	4,37,81,000.00
	TOTAL		**5,14,21,000.00**

ADMINISTRATIVE & OPERATIVE COST

S. No.	Particulars	@	Amount (INR)
1	Salaries and Wages	5% of Sales Revenue	2,11,36,500.00
2	Administrative & Operation Cost	2% of Sales Revenue	92,17,000.00
3	Contingencies and Overhead	1.5% of Sales Revenue	69,12,800.00
			3,72,66,300.00

REVENUE/EARNINGS ENVISAGED

SAMSUNG SMART CITY – II (DDJAY) - License No. 70 of 2018					
REVENUE/EARNINGS :					
SALES REALIZATION					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In SQ Yds)**	**Unit Rate (INR) @ per SQ. Yd.**	**Amount (INR)**
1	Plot(s)	7.27840	35,227.46	12,000.00	42,27,29,520/-
2	Commercial	0.45010	2,178.48	17,500.00	3,81,23,400/-
	TOTAL				**46,08,52,920/-**
	or SAY				***4,608.53 Lacs***

FUND FLOW SUMMARY

SAMSUNG SMART CITY – II (DDJAY) - License No. 70 of 2018					
(A) REVENUE/EARNINGS :					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In Sq Yds)**		**Amount (INR in Lacs)**
	Plot(s) & Commercial (Saleable Area)	**7.72850**	**37,405.94**	**=**	**4,608.53**
(B) EXPENDITURE :					
S. No.	**Particulars**	**Area (In Acres)**	**Area (In Sq. Yds)**		**Amount (INR)**
LAND COST					
1	In revenue estate of Village Rattangarh	8.36250	40,474.50	=	696.63
2	In revenue estate of Village Jhambra Patti	6.48125	31,369.25	=	679.77
	Total Land Cost	**14.84375**	**71,843.75**	**=**	**1,376.40**
	Cost per SQY				***1,916 per SQY***
LICENSING COST					
3	Licensing Cost (including EDC paid)	14.84375	71,843.75	=	**80.23**
	Cost per SQY				***112 per SQY***
CONSULTANT, SURVEY AND TESTING FEE					
4	Consultants Fee		L.S.	=	17.47
5	Surveying Fee		L.S.	=	5.46
6	Testing Fee		L.S.	=	0.40
	Total Design & Planning Fee			**=**	**23.33**
	Cost per SQY				***32 per SQY***
INFRASTRUCTURE DEVELOPMENT COST					
7	Plumbing Services, Internal Roads, Street Lighting, Landscaping with 10 years Maintenance	14.84375	71,843.75	=	1,194.60
8	Electrification (HT / LT & LV) with DWC Pipes	14.84375	71,843.75	=	314.19
9	Boundary Wall, Guard Room, Security System, Fire Fighting Installations, Signages, Hardscape Walkways/Pavers, Play Equipments	-	L.S.	=	105.23
	Total Infrastructure Development Cost			**=**	**1614.02**
	Cost per SQY				***2,247 per SQY***

S. No.	Particulars	Area (In Acres)	Area (In Sq. Yds)		Amount (INR)
MARKETING & SELLING COST					
10	Marketing Cost		L.S.	=	76.40
11	Selling Cost		L.S.	=	437.81
	Total Marketing & Selling Cost			**=**	**514.21**
	Cost per SQY				***716 per SQY***
ADMINISTRATIVE & OPERATIVE COST					
12	Salaries and Wages		L.S.	=	211.37
13	Administrative & Operation Cost		L.S.	=	92.17
14	Contingencies and Overhead		L.S.	=	69.12
	Total Administrative & Operative Cost			**=**	**372.66**
	Cost per SQY				***519 per SQY***
	Total Expenditure				**3,980.85**
	Nett Earnings (Revenue – Expenditure)				***627.68***
	Return on Investment				***15%***

****